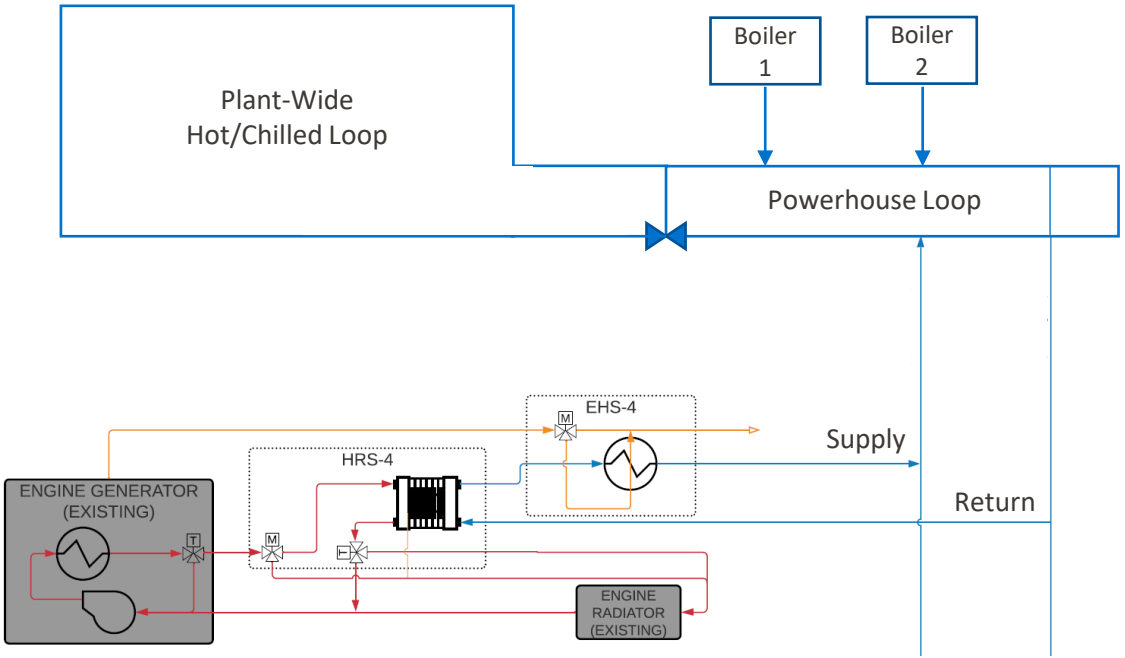
GM FORT WAYNE ASSEMBLY
Energy Performance Project
Steam Elimination Project

Powerhouse Heat Recovery

- The previous steam boilers produced 250# steam, which we reduced to 50#. 50# steam ran through (3) hot water heat exchangers which converted steam to hot water for distribution in the seasonal loop for the plant air supply houses.
- This project abandoned the (2) 250# steam boilers and replaced them with two (2) 25MMbtu natural gas hot water boilers.
- In addition, we installed (4) exhaust skids and (4) jacket water skids capable of producing 21 MMBTU/HR waste heat and (1) 800-ton absorption chiller in cooling season from the1600kW LFG Generators

Powerhouse Heat Recovery



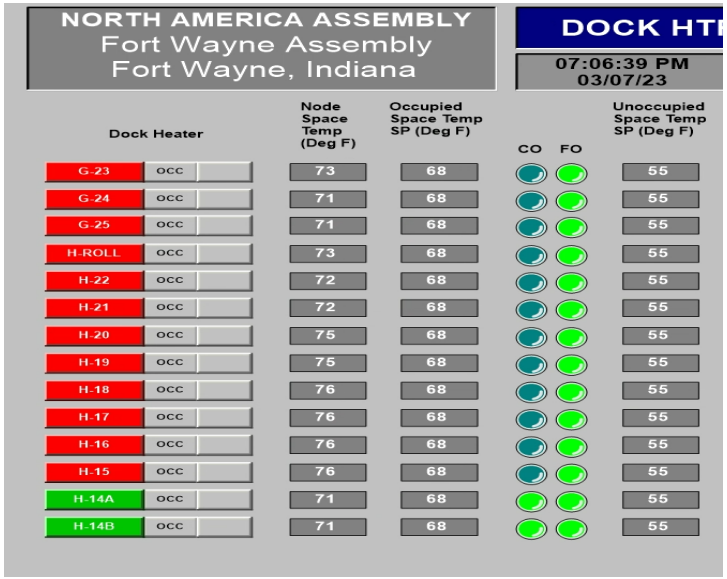
Combined Heat & Power

Existing 1600KW LFG Generator Source for Heat Recovery Skids.

New Exhaust Heat Recovery Skids Exhaust (1000F) to water (220F) heat exchanger – 650 GPM

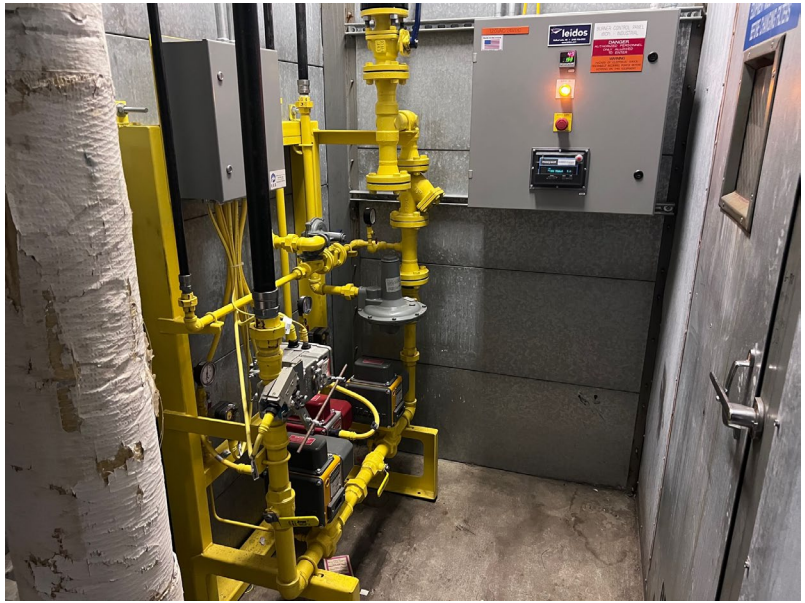
New Jacket Water (225F) Heat Recovery Skids – 650 GPM

Dock Door Heaters and Control

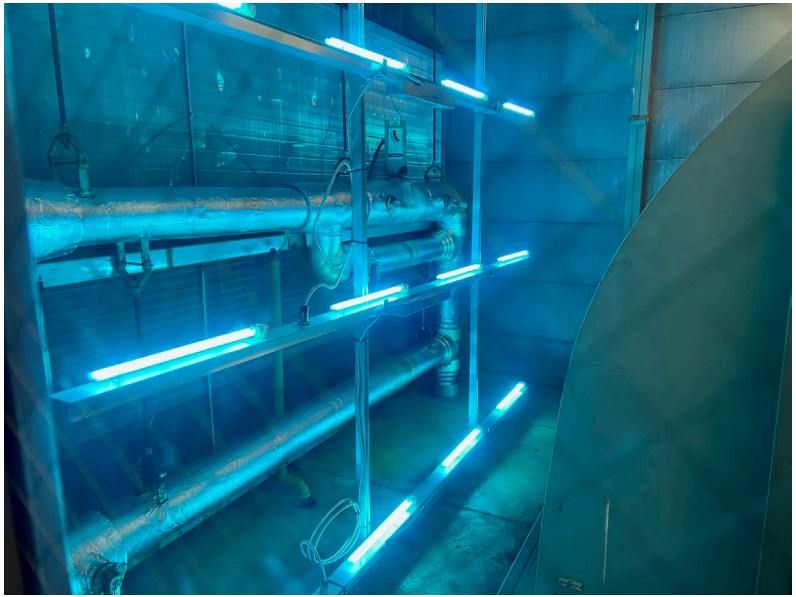


- All steam dock door heaters have been converted to natural gas dock door heaters.
- The heaters are now thermostatically controlled and are scheduled remotely based on occupancy.
- The heaters are integrated into EMS/TSC (Energy Management System/Time Schedule Control) using a wireless system that allows for remote adjustment of setpoints that align with GM Corporate Temperature Requirements.
- In addition to the Controls Upgrade, Cambridge natural gas heaters were added to cover multiple doors thus reducing the amount of energy required to heat the dock.

Air Supply House Upgrades



Multiple steam heated air supply units were converted to direct/indirect fired natural gas units.



- All air house supply coils were cleaned to improve thermal energy efficiency and reduce static pressure across the coils
- UV light arrays were installed on (111) air houses to prevent future build up and maintain a clean energy efficient unit.

Rooftop Office Air Handler Upgrade

BEFORE

AFTER

(2) Steam/DX rooftop office air handlers were replaced with new, more efficient indirect fired natural gas heat/DX cooling air handlers

Fire Water Storage Tank Insulation

BEFORE

Fire Water Storage Tanks previously used steam heating for freeze protection.

AFTER

The tanks were lined with new foil-faced insulation panels laminated to stucco embossed aluminum sheeting which eliminated the need for heating.

Additional Project Upgrades

- Line Lighting Controls
- Powerhouse Makeup Air Unit Conversion - Steam to Hot Water
- Body Shop Admin Perimeter Boiler - Steam to Hot Water
- General Assembly Paint Kitchen Duct Heater - Steam to Electric
- Trestle Steam Unit Heater Conversions - Steam to Hot Water
- General Assembly Admin Hot Water Loop - Steam to Hot Water